



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## A brief conspectus of the species of *Kneiffia*, with the characterization of a new allied genus

FRANCIS W. PENNELL

It has recently been shown that the best-known specific name among our sundrops must be transferred from one species to another. While such a change is always peculiarly unfortunate, the desire for a definite nomenclature makes it unavoidable. In tradition the name "*fruticosa*" had been handed down as applying to the glandular-fruited element of the aggregate at first known by that name, whereas study of the Clayton Herbarium specimen upon which Linnaeus based the species showed that the name must be associated with the plant bearing on the capsule glandless incurved hairs.

Nomenclature should follow definite rules of procedure, but surely scientific truth may raise the question as to the advisability of continuing the name "*fruticosa*" for *any* species of a group of plants with herbaceous, strictly annual stems. May we not plead the right to reject a proved *nomen falsum*? Moreover, from this standpoint in freeing our most widely known *Kneiffia* from the *onus* of the word "*fruticosa*," Dr. Blake has hardly improved nomenclature—surely not in the opinion of our genetical friends—by the substitution of the name "*hybrida*." One of the incentives to the present study has been the hope of finding for this species some appropriate name.

Another incentive has been the desire to place correctly a plant characteristic of the restricted but most unique prairie near New York City, the Hempstead Plains. This plant, which seems amply distinct, appears below as *K. velutina*.

I present the results of this study with hesitation. Species-lines have not always been found clear, and in any genus so near to *Oenothera* one may expect the same tendency to split into incipient species. However, before this genus likewise is selected

for intensive cultivation and study, it may be well, from the viewpoint of the taxonomist, to present an outline of its composition.

For this study I have examined specimens in the herbaria of the New York Botanical Garden, United States National Museum, Missouri Botanical Garden, Academy of Natural Sciences of Philadelphia, University of Pennsylvania and Charleston Museum.

Stem-leaves broadly linear to ovate. Bracts similar to the leaves, linear, longer than the capsules. Stigmas linear, conspicuous. Wings of capsule pronounced.

KNEIFFIA.

Mature capsule clavate-linear, not stipitate.

Hypanthium 20-25 mm. long. Sepals with spreading-hirsute caudate tips, 2-4 mm. long. Petals 20-25 mm. long. Stem, leaves and capsules hirsute.

1. *K. pratensis*.

Hypanthium 10-12 mm. long. Sepals with shorter tips, strigose or somewhat spreading-pubescent. Petals 15-18 mm. long. Stem, leaves and capsules ascending- or appressed-pubescent.

2. *K. sessilis*.

Mature capsule-body clavate to oblong, more or less stipitate.

Petals of earlier flowers 12-25 mm. long. Inflorescence when in fruit much less than one half height of plant.

Mature capsule-body decidedly clavate, pubescent with normally incurved glandless hairs, in Nos. 8 and 9 with some interspersed gland-tipped hairs.

Mature capsule-body about as wide as long, usually much shorter than the stipe.

Capsule with minute appressed hairs. Leaves broadly linear, strigillose to glabrous. Basal leaves narrowly oblanceolate.

3. *K. subglobosa*.

Capsule hirsute-strigose. Leaves linear-lanceolate, densely silvery-silky.

4. *K. arenicola*.

Mature capsule-body longer than wide, longer than, about equaling or sometimes shorter than the stipe. Basal leaves broadly lanceolate to ovate.

Stipe and capsule-body both pubescent with glandless hairs, the

- stipe frequently equaling or sometimes exceeding the capsule-body.
- Stipe of capsule in fruit equaling or somewhat exceeding the permanently pubescent body.
- Plant erect. 5. *K. fruticosa*.
- Plant diffusely spreading. 5a. *K. fruticosa humifusa*.
- Stipe of capsule in fruit shorter than the body, which tends to become glabrate.
- Main stem-leaves 7-9 cm. long, glabrate. Capsule-body pubescent with minute hairs. 6. *K. riparia*.
- Main stem-leaves 3-6 cm. long, densely pubescent. Capsule-body pubescent with coarse hairs. 7. *K. brevistipata*.
- Stipe pubescent with gland-bearing hairs; frequently also such are interspersed with the incurved glandless hairs of the capsule-body. Stipe always shorter than the capsule-body.
- Leaves nearly linear, finely pubescent to glabrate, 5-9 cm. long. Capsule-body clavate. 8. *K. semiglandulosa*.
- Leaves lanceolate, softly densely pubescent, 2-4 cm. long. Capsule-body clavate-oblong. 9. *K. velutina*.
- Mature capsule-body oblong or nearly so, pubescent with short straight gland-tipped hairs, or becoming glabrate.
- Main stem-leaves linear-lanceolate to lanceolate-ovate, scarcely paler beneath. Stem pubescent to rarely glabrous. Petals of earlier flowers 18-25 mm. long.
- Stem sparsely pubescent to glabrous. Leaves lanceolate.
- Stipe shorter than the capsule-body. 10. *K. tetragona*.
- Stipe longer than the capsule-body. Leaves usually narrower. 10a. *K. tetragona longistipata*.
- Stem more or less hirsute. Leaves lanceolate-ovate. Inflorescence usually congested. 10b. *K. tetragona hybrida*.

Main stem-leaves lanceolate-ovate to ovate, glaucous beneath. Stems glabrous or rarely obscurely pubescent. Petals of earlier flowers 25-30 mm. long.

11. *K. glauca*.

Petals of earlier flowers 5-15 mm. long. Inflorescence in fruit usually over one half height of plant.

Capsule pubescent with incurved glandless hairs. Petals of earlier flowers 10-15 mm. long. Inflorescence erect from the first.

12. *K. Spachiana*.

Capsule sparsely pubescent with gland-tipped hairs. Petals of earlier flowers 5-10 mm. long. Young inflorescence nodding.

13. *K. perennis*.

Stem-leaves filiform-linear to filiform. Bracts deltoid-ovate to ovate, shorter than the capsules. Stigmas very short, scarcely appearing as lobes. Wings of capsule ridge-like.

PENIOPHYLLUM.

### KNEIFFIA Spach

*Kneiffia* Spach, Hist. Veg. 4: 373. 1835.

Type species, *Oenothera glauca* Michx.

#### 1. KNEIFFIA PRATENSIS Small

*Kneiffia pratensis* Small, Fl. SE. U. S. 842, 1335. 1903. "Type, Jefferson Co., Mo., Eggert, June 11, 1878, in Herb. N. Y. B. G." Type seen.

*Kneiffia Sumstinei* Jennings, Ann. Carnegie Mus. 3: 480. pl. 19. 1906. "Dry upland field near Kittanning [Pennsylvania], D. R. Sumstine, June, 1905. Type specimens in the Pennsylvania Herbarium of the Carnegie Museum. Acc. No. 2905." Isotype seen in the herbarium of the New York Botanical Garden.

*Oenothera pratensis* Robinson, Rhodora 10: 34. 1908.

Prairies and woods, Ohio to Wisconsin, Iowa and Arkansas; introduced near New York City, Pittsburgh and Washington.

#### 2. *Kneiffia sessilis* Pennell, sp. nov.

Stem 3-4 dm. tall, pubescent with ascending hairs. Leaves 6-9 cm. long, acutish, densely strigose-pubescent with ascending hairs, in age somewhat glabrate. Bracts much exceeding the

capsules. Hypanthium 10-12 mm. long. Sepals 15-16 mm. long, long-attenuate; tips more or less free in the bud. Petals triangular, 15-17 mm. long. Filaments less than one half the length of the petals. Anthers 6-7 mm. long, yellow. Stigmas becoming one half length of style. Capsule linear, at least 9 mm. long, densely pubescent with ascending to appressed hairs; not seen mature.

Type, L[ittle] R[ock], Ark[ansas], collected in flower June 2, 1885, *Dr. H. E. Hasse*; in the herbarium of the New York Botanical Garden.

Also "La. Hale," in the United States National Herbarium, with longer hypanthium, broader leaves and less dense pubescence apparently belongs to this species.

### 3. KNEIFFIA SUBGLOBOSA Small

*Kneiffia subglobosa* Small, Bull. Torrey Club 23: 177. 1896.

"North Carolina and Georgia." Type, "on the slopes or summit of Stone Mountain, De Kalb County, Georgia," collected in fruit September 6-12, 1894, *J. K. Small*, seen in the herbarium of Columbia University at the New York Botanical Garden; isotypes in the herbaria of the United States National Museum and the Missouri Botanical Garden. I have found no basis for the crediting of this species to North Carolina.

Open rocky slopes, over granite, central Georgia to central Alabama.

### 4. KNEIFFIA ARENICOLA Small

*Kneiffia arenicola* Small, Fl. SE. U. S. 842, 1335. 1903. "Type, Biltmore Herb., no. 5649d, in Herb. N. Y. B. G." Type, "sand hills, Augusta, Georgia," collected in fruit July 27, 1900, seen in the herbarium of the New York Botanical Garden; isotype in the United States National Herbarium.

Sand-hills and dry pine-barrens, in the Coastal Plain, South Carolina to southern Mississippi.

### 5. KNEIFFIA FRUTICOSA (L.) Raimann

*Oenothera fruticosa* L. Sp. Pl. 346. 1753. "*Habitat in Virginia.*"

Type, *Clayton* 36, is identified by Dr. S. F. Blake (*Rhodora* 20: 51. 1918) as the plant here considered.

*Oenothera florida* Salisb. Prod. 278. 1798. New name for *O. fruticosa* L.

*Oenothera linearis* Michx. Fl. Bor. Amer. 1: 225. 1803. "Hab. in Carolina superiore." Type not seen or verified.

*Kneiffia angustifolia* Spach, Nouv. Ann. Mus. Par. 4: 367. 1835. "Habitat in Georgia, Carolina, et Virginia." Type not seen or verified.

*Kneiffia linearis* Spach, Hist. Veg. 4: 376. 1835.

*Kneiffia longipedicellata* Small, Bull. Torrey Club 23: 178. 1896. "West Virginia to North Carolina and Florida." Type, "Albemarle Co., Virginia," collected May 21, 1889, W. C. Rives, seen in the herbarium of Columbia University at the New York Botanical Garden.

*Kneiffia fruticosa* Raimann; Engler & Prantl, Nat. Pflanzenfam. 37: 214. 1893.

*Oenothera longipedicellata* Robinson, Rhodora 10: 34. 1908.

Open soil, sandy or barren, mostly in the Coastal Plain although extending inland upon suitable soils (as in the serpentine barrens of southeastern Pennsylvania and eastern Maryland), Long Island to Florida, Missouri and Texas.

5a. ***Kneiffia fruticosa humifusa*** (Allen) Pennell, comb. nov.

*Oenothera fruticosa humifusa* Allen, Bull. Torrey Club 1: 3. 1870. Type, "Montauk Point Long Island. [T. F. Allen.] July 1869," seen in the herbarium of Columbia University at the New York Botanical Garden.

*Kneiffia linearis Alleni* Britton, Mem. Torrey Club 5: 235. 1894. Based on *Oenothera fruticosa humifusa* Allen.

*Kneiffia Alleni* Small, Bull. Torrey Club 23: 177. 1894.

(?) *Oenothera linearis Eamesii* Robinson, Rhodora 10: 34. 1908. "Sandy shore of a salt pond, Stratford, Connecticut, E. H. Eames (type hb. Gray)." Perhaps rather a form of the species, approaching *humifusa*.

(?) *Oenothera fruticosa Eamesii* Blake, Rhodora 20: 50. 1918.

Sandy soil, eastern Long Island, New York, and perhaps on the Connecticut coast. Said to be of very distinct appearance and, locally near Montauk, to be extremely abundant. Specimens elsewhere along the coast approach the habit of this.

6. *KNEIFFIA RIPARIA* (Nutt.) Small

*Oenothera riparia* Nutt. Gen. N. Amer. Pl. 1: 247. 1818. "HAB.

On the banks of Cape Fear river, Wilmington, North Carolina, in situations subject to inundation."

*Kneiffia riparia* Small, Fl. SE. U. S. 842. 1903.

Swamps along the Cape Fear River, near Wilmington, North Carolina. Little known, although recently re-collected by Dr. J. M. Macfarlane, C. S. Williamson, etc. Possibly not a distinct species.

7. *Kneiffia brevistipata* Pennell, sp. nov.

Stem 2-4 dm. tall, pubescent. Leaves 3-6 cm. long, linear-lanceolate, acutish, densely strigose-pubescent with ascending hairs, the young leaves very silky. Bracts slightly exceeding the capsules. Hypanthium 6-9 mm. long. Sepals 7-9 mm. long, acutish; tips not free in the bud. Petals triangular, 12-15 mm. long. Filaments about one half length of petals. Anthers 3-3.5 mm. long, yellow. Stigmas less than one half length of style. Capsule-body clavate-oblong, 5-6 mm. long; wings raised beyond ridges; pubescent, becoming glabrate, especially distally; on a stipe less than its own length.

Type, Poplarville, Mississippi, collected in flower and fruit, July 7, 1891, *S. M. Tracy 1681*; in the United States National Herbarium.

Dry pine ridges, southern Alabama to eastern Louisiana.

8. *Kneiffia semiglandulosa* Pennell, sp. nov.

Stem 3-6 dm. tall, finely pubescent, becoming glandular above, purple-red. Leaves 5-9 cm. long, lanceolate-linear, acutish, finely pubescent with ascending hairs to glabrate. Bracts much exceeding the capsules. Hypanthium 10-20 mm. long. Sepals 10-13 mm. long, acuminate; tips not or slightly free in the bud. Petals triangular, 15-25 mm. long. Filaments about one half length of petals. Anthers 5-6 mm. long, yellow. Stigmas less than one third length of style. Capsule-body clavate, 8-10 mm. long, wings exceeding the prominent ridges; finely pubescent with spreading gland-tipped, usually also with some incurved glandless, hairs, often glabrous or nearly so; on a stipe less than its own length.

Type, Biloxi, Mississippi, collected in flower April 21, 1891, *S. M. Tracy 5064*, in the United States National Herbarium.

Pine-land, West Florida to southern Mississippi; on ballast at Wilmington, North Carolina.



9. *Kneiffia velutina* Pennell, sp. nov.

Stem 2–4 dm. tall, pubescent. Leaves 2–4 cm. long, narrowly or broadly lanceolate, acute to acutish, densely soft-pubescent. Inflorescence less than one fourth height of plant. Bracts little exceeding, the upper shorter than the capsules. Hypanthium 9–12 mm. long. Sepals 10 mm. long, somewhat attenuate, so that buds are slightly caudate. Petals triangular, 15–20 mm. long. Filaments about one half length of petals. Anthers pale yellow. Stigmas about one third length of style. Capsule-body oblong, slightly clavate, 7–9 mm. long; the wings almost equaling width of body; pubescent with incurved hairs and, especially proximally, with some finer gland-tipped hairs.

Type, dry sandy soil, Garden City, Long Island, New York, collected in flower June 23, 1902, *F. A. Mulford*; in the herbarium of the New York Botanical Garden.

Dry sandy soil, apparently restricted to the Hempstead Plains of western Long Island, from which numerous collections have been seen.

10. *Kneiffia tetragona* (Roth) Pennell, comb. nov.

*Oenothera tetragona* Roth, *Catalecta* 2: 39. 1800. A garden plant, for which an American origin is stated. No specimen seen but the full description would apply to the plant here considered.

*Oenothera fruticosa ambigua* Nutt. *Gen. N. Amer. Pl.* 1: 247. 1818. "HAB. Common around Philadelphia."

*Oenothera incana* Nutt. *l. c.* 247. 1818. "HAB. In dry woods, Maryland.—Dr. W. C. Barton, *v. s.* in *Herb. Barton*."

*Oenothera pilosella* Raf. *Ann. Nat.* 15. 1820. "Indiana, near Evansville."

(?) *Oenothera canadensis* Goldie, *Edinb. Phil. Jour.* 6: 325. 1822. "Island of Montreal." The size of flowers would indicate that this plant must be *K. tetragona*. Apparently far out of the normal range of the species (see Macoun, *Cat. Canad. Pl.* 1: 172. 1883).

*Oenothera ambigua* Spreng. *Syst.* 2: 229. 1825.

*Oenothera serotina* Sweet, *Brit. Fl. Gard.* 2: *pl.* 184. 1826.

A garden plant, of which no specimen seen.

*Kneiffia suffruticosa* Spach, *Hist. Veg.* 4: 374. 1835. "Croît dans les Etats Unis, depuis la Géorgie jusqu' au Canada."

*Kneiffia maculata* Spach, *l. c.* 375. 1835. "*Oenothera serotina* Sweet. . . ."

*Oenothera fruticosa phyllopus* Hook. Bot. Mag. 64: sub *pl.* 3545. 1837. "Bot. Mag. t. 332."

*Oenothera fruticosa incana* Hook. *l. c.* sub *pl.* 3545. 1837.

*Oenothera fruticosa hirsuta* Nutt.; T. & G., Fl. N. Am. 1: 496. 1840.

*Oenothera hybrida ambigua* Blake, *Rhodora* 20: 52. 1918.

Dry soil, barrens, etc., New York to Alabama, Tennessee and southern Michigan; the commonest *Kneiffia* of the Piedmont and Alleghanian floras.

10a. ***Kneiffia tetragona longistipata*** Pennell, var. nov.

Leaves linear-lanceolate. Stipe equaling capsule-body.

Type, woods near Clemson, Pickens County, South Carolina, collected in flower May 12, 1907, *H. D. House* 3340; in the herbarium of the New York Botanical Garden.

Piedmont Region, North Carolina to Georgia.

10b. ***Kneiffia tetragona hybrida*** (Michx.) Pennell, comb. nov.

*Oenothera hybrida* Michx. Fl. Bor. Amer. 1: 225. 1803. "*Hab. in Carolina superiore.*"

*Kneiffia floribunda* Spach, Hist. Veg. 4: 376. 1835. "Croît dans le midi des Etats-Unis."

Mountains of North Carolina, there nearly or quite replacing the typical form of the species. As examples may be cited: *Biltmore Herb.* 669b; *Heller* 263; and *Standley* 5366.

11. **KNEIFFIA GLAUCA** (Michx.) Spach

*Oenothera glauca* Michx. Fl. Bor. Amer. 1: 224. 1803. "*Hab. in sylvis remotis et occidentalibus flumini Mississippi confinibus, versus regionem Illinoensium.*" Surely the plant here considered, although not known to occur so far west as the type station.

*Oenothera Fraseri* Pursh, Fl. Amer. Sept. 2: 734. 1814. "In South Carolina *Fraser* . . . v. v. in *Hortis.*"

*Kneiffia glauca* Spach, Hist. Veg. 4: 374. 1835.

*Kneiffia Fraseri* Spach, *l. c.* 375. 1835.

*Oenothera fruticosa Fraseri* Hook. Bot. Mag. 64. sub *pl.* 3545. 1837.

*Oenothera fruticosa glauca* Lév. Monog. Oenothera 107. 1902.

Wooded mountain-slopes, southern Virginia to northern Georgia, eastern Tennessee and eastern Kentucky.

12. *KNEIFFIA SPACHIANA* (T. & G.) Small

*Oenothera Spachiana* T. & G., Fl. N. Am. 1: 498. 1840. "Texas, Drummond."

*Kneiffia Spachiana* Small, Bull. Torrey Club 23: 179. 1896.

*Oenothera fruticosa* race *Spachiana* Lév. Monog. Oenothera 106. 1902.

Sandy prairies, Kansas and northwestern Arkansas to Louisiana and Texas.

13. *Kneiffia perennis* (L.) Pennell, comb. nov.

*Oenothera perennis* L. Syst. ed. 10, 998. 1759. Canada.

*Oenothera pumila* L. Sp. Pl. ed. 2. 493. 1762. "Habitat in America septentrionali."

*Oenothera chrysantha* Michx. Fl. Bor. Amer. 1: 225. 1803. "Hab. a Quebec usque ad sinum Hudsonis."

*Oenothera pusilla* Michx. l. c. 225. 1803. "Hab. in rupibus, ad lacus Mistassins."

*Kneiffia chrysantha* Spach, Nouv. Ann. Mus. Par. 4: 368. 1835.

*Kneiffia Michauxii* Spach, Ann. Sc. Nat. Bot. II. 4: 167. 1835.

Based on *Oenothera chrysantha* Michx.

*Kneiffia pumila* Spach, Hist. Veg. Phan. 4: 377. 1835.

*Oenothera pumila chrysantha* Gordinier & Howe, Fl. Rensselaer Co., N. Y. 14. 1894. "Poestenkill, Howe."

*Oenothera pumila rectipilis* Blake, Rhodora 19: 110. 1917. "NEW BRUNSWICK: dryish rocky ground, Petit Rocher, Gloucester Co., 21 Aug. 1913, Blake 5513 (TYPE in Gray Herb.)." The unusual state in which the pubescence is spreading may be considered as a form.

Dry fields, Nova Scotia and Quebec to Minnesota and North Carolina; northward to Hudson Bay; also on St. Pierre Island.

**PENIOPHYLLUM\*** Pennell, gen. nov.

Slender glabrous herb, with virgately branched stem. Leaves of two forms, the basal petioled, ovate, less than 2 cm. long, the numerous stem-leaves scattered, filiform-linear to filiform, longer. Flowers in spikes terminal on the stem and branches. Bracts deltoid-ovate to ovate, shorter than the capsules. Sepals partially cohering, reflexing in two pieces. Petals about 4 mm. long, triangular. Filaments unequal, glabrous. Anthers oblong, glabrous. Style glabrous. Stigma broad, capitate, the four lobes scarcely or not distinguishable. Capsule 4-6 mm. long, ellipsoid, sharply 4-angled, not stipitate. Seeds angled, brown, 1 mm. long, irregularly clustered.

Type species, *Oenothera linifolia* Nutt.

**1. Peniophyllum linifolium** (Nutt.) Pennell, comb. nov.

*Oenothera linifolia* Nutt. Jour. Acad. Nat. Sci. Phila. 2: 120.

1821. "Habitat. On the summits of arid hills and the shelvings of rocks, near the banks of the Arkansas [*T. Nuttall*]." Specimen, labeled "Arkansa, Nuttall," seen in herbarium of Columbia University at the New York Botanical Garden.

*Kneiffia linifolia* Spach, Nouv. Ann. Mus. Par. 4: 368. 1835.

*Kneiffia linearifolia* Spach, Ann. Sc. Nat. Bot. II. 4: 167. 1835.

Based upon *Oenothera linifolia* Nutt.

Sandy soil, prairies and open woodland, southern Missouri and Kansas south to western Louisiana and eastern Texas; also on granite in central Georgia and central Alabama.

NEW YORK BOTANICAL GARDEN

---

\* From *πηνίον*, thread, and *φύλλον*, leaf.